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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,164

01/11/2006

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Q91756

7852

23373 7590 04/15/2008  
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EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

04/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,164	<b>Applicant(s)</b> MIYAJI ET AL.	
	<b>Examiner</b> Tran Nguyen	<b>Art Unit</b> 2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-10 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.                                                            | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 6-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yoshida (US 4,489,374)** in view of **Farr (US 4,146,831)** or in alternation, **Yoshida (US 4,489,374)** in view of **Quantz (US 3,922,592)**.

**Yoshida** discloses an alternator (in background section) comprising a rotor fixed to a shaft so as to rotate with said shaft; a stator disposed so as to surround said rotor, an alternating current being generated in said stator by a rotating magnetic field from said rotor. Such components: the rotor, the shaft, the stator are essential parts of an alternator because the rotor rotatably support by a shaft to magnetically interact with a stator for generating alternating current, without these parts the alternator would not be operatable. Yoshida particularly discloses the alternator also comprises a voltage control apparatus (22) for adjusting magnitude of an output voltage of said alternating current generated in said stator, wherein:

said voltage control apparatus (22) comprises a heat sink (26); and a control main body fixed to said heat sink (Figs 8-11), said control main body including an integrated circuit chip (23) on which a circuit for controlling said output voltage is formed; and,

as shown in Fig 10, a positioning portion for positioning said control main body relative to said heat sink is disposed on said heat sink so as to project from a major surface of said heat sink (26) to which said control main body is fixed; and,

as shown in Fig 11, a blocking portion (24) is disposed on said heat sink (26) between a connector (25) having terminals for electrical connection to an external portion and said integrated circuit chip (23), said blocking portion blocking electromagnetic noise from said connector; and,

said control main body is a molded package in which said integrated circuit chip is enveloped in a resin; and,

**Yoshida** discloses the claimed alternator; except for the limitations of the *heat sink is a grounded, electrically-conductive heat sink*.

**Farr**, however, teaches an alternator having a voltage control apparatus comprising a grounded, electrically-conductive heat sink, to which the control apparatus's main body is fixed for the advantages of maximum heat transfer and circuit simplicity (col 4, lines 46-50).

**Quantz**, also teaches an alternator having a voltage control apparatus comprising a grounded, electrically-conductive heat sink, to which the control apparatus's main body is fixed for the purpose of reducing manufacturing cost of the alternator.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this particular case, those skilled in the art would understand that the Farr's and Quantz's important teaching is that in order to maximize an alternator's heat transfer, to simplify circuit design of the voltage control apparatus thereof, and to reduce overall manufacturing cost, the alternator's voltage control

apparatus should be provided with a grounded, electrically-conductive heat sink, to which the control apparatus's main body is fixed.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the heat sink of the voltage control apparatus in the alternator by electrically configuring the heat sink as a grounded, electrical-conductive heat sink, as taught by Farr or Quantz. Doing so would provide an alternator with the advantages of maximum heat transfer, circuit simplicity, and reduced manufacturing cost.

Regarding claim 10, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the voltage control apparatus so that the molded package has a hexahedral shape; and the heat sink has a substantially angular C-shaped cross section, as in claim 10. Doing so would improve the heat sink's accommodation to the voltage control main body and enhance the heat transfer because the voltage control main body being surrounded by heat sink's surfaces. Also, since the combination of Yoshida and Farr, or of Yoshida and Quantz, does disclose the voltage control main body molded package and the grounded heat sink, it would be obvious to an artisan with necessary mechanical skills and ordinary knowledge to re-design suitable sizes and shapes of the respective voltage control apparatus' molded package and the grounded heat sink in accordance with space availability within the alternator, as well as to further enhance heat transfer for the voltage control apparatus. Such modification has been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955) (emphasis added).

### ***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen via **email** at **Tran.Nguyen@USPTO.gov**

The applicant is advised that all communications via email are unofficial; emailing is only a means to establish contact with the Examiner.

Alternately, the examiner's telephone number is 571-272-2030 from 7:00 AM - 4:00 PM.

If attempts to reach the examiner by email and/or telephone are unsuccessful, the Examiner can be reached via email. If attempts to reach the examiner by telephone or email are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. (**Note: Use this Central Fax number 571-273-8300 for all official response.**)

Do **not** use the Examiner's RightFax number without informing the Examiner first because, according to the USPTO policy, any document being sent via RightFax is treated as unofficial response and will not be officially dated until it is routed to the Central Fax.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tran Nguyen/

Primary Examiner, Art Unit 2834